I, Marcelino Curell Aguilà, Authorised Translator of English appointed by the Spanish Ministry of Foreign Affairs, of Passeig de Gràcia 65 bis, 08008-Barcelona, Spain, hereby certify that I am well acquainted with the Spanish and English languages and that the following is a true translation, done by me, of the certified copy of Spanish Patent of Invention No. P200101748, written in Spanish language.

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ENGLISH TRANSLATION OF A CERTIFIED COPY OF SPANISH PATENT OF INVENTION No. **200101748**

SPANISH PATENT

AND

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OFFICIAL CERTIFICATE

I hereby certify that the annexed documents are an exact copy of the application for PATENT OF INVENTION No. **200101748** filed at this Office on ////////////////.

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The Director of the Patents and
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Pp ////////////////

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SPANISH PATENT AND TRADEMARK OFFICE

APPLICATION FORM

FOR: **X PATENT OF INVENTION; __ UTILITY MODEL**

APPLICATION NUMBER: **P200101748**

DATE AND TIME OF FILING AT THE P.O.: **26 JULY 2001; 9:17**

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(1) ___ APPLICATION FOR ADDITION; ___ DIVISIONAL APPLICATION; ___ CHANGE OF TYPE OF PROTECTION; ___ CONVERSION OF EUROPEAN PATENT APPLICATION.= (2) MAIN OR ORIGINAL FILE; Type: - ; Application No.: - ; Filing date: - ; Type: - ; Application No.: - ; Filing date: - .= (3) PLACE OF FILING: **Madrid** Code: **28**.= (4) APPLICANT(S), Surname or company name: **MONTSERRAT MARSAL**; First name: **ALBERT**; Identity document No.: **35100709 - H**.= (5) DETAILS OF FIRST APPLICANT: Address: **Escollera del Poblenou, Local 19, Port Olimpic**; Town: **Barcelona**; Province: **Barcelona**; Country of residence: **Spain**; Nationality: **Spanish**; Telephone: -; Postal Code: **08005**; Country code: **ES**; Nation code: **ES**.= (6) INVENTOR: Surname: **Montserrat Marsal**; First name: **Albert**; Nationality: **Spanish**; Nation code: **ES**.= (7) **X** The applicant is the inventor; ___ The applicant is not the inventor or the sole inventor.= (8) HOW RIGHTS WERE ACQUIRED: ___ Work invention; __ Contract; ___ Transfer.= (9) TITLE OF THE INVENTION: **"Container closure"**. = (10) INVENTION CONCERNS MICROBIOLOGICAL PROCESS UNDER SECTION 25.2 OF THE SPANISH PATENT ACT: _ Yes; **X** No.= (11) OFFICIAL EXHIBITIONS: Place: - ; Date: - .= (12) DECLARATIONS OF PRIORITY: Country of Origin: -; Country code: -; Number: -; Date: -.= (13) THE APPLICANT CLAIMS POSTPONEMENT OF FEE PAYMENT UNDER SECTION 162 OF THE SPANISH PATENT ACT: __ Yes **X** No. = (14) REPRESENTATIVE: Surname: **CURELL SUÑOL**, First name: **Marcelino**, Code: **0220**, Address for service: **Passeig de Gràcia 65 bis**, Town: **Barcelona**, Province: **Barcelona**, Postal Code: **08008**.= (15) LIST OF ACCOMPANYING DOCUMENTS: **X** Description, No. of pages: **15**; **X** Claims, No. of claims: **3**; **X** Drawings, No. of pages: **4**; **X** Abstract; - Priority document; - Translation of

priority document; X Document of representation; - Pulls; X Fee payment receipt; - Additional information sheet; - Others.

(16) NOTICE OF PAYMENT OF GRANT FEE: You are advised that this application is held to have been withdrawn if the grant fee is not paid; for payment of this fee, you have three months from the publication of the mention of grant in the Official Gazette, in addition to the ten days provided for under Sect. 81 of Royal Decree 10/10/1986.

SIGNATURE OF THE OFFICIAL [illegible signature].

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TO THE DIRECTOR OF THE SPANISH PATENT AND TRADEMARK OFFICE.=

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APPLICATION NUMBER **P200101748**

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PATENT

ABSTRACT AND DRAWING

ABSTRACT (Max. 150 words)

Container closure, such as is suitable for being mounted in the exit aperture of the container and hermetically closing the exit aperture, and which comprises a first inflatable part (1) and a second part (3) suitable for being secured in the exit aperture, and means of separation (7) suitable for preventing a liquid held in said interior of said container from passing to said first inflatable part (1). The means of separation (7) can comprise a semi-permeable filter (8), suitable for allowing the passage of gases and for preventing the passage of liquids, or a hermetic division.

(Fig. 1)

DRAWING

[Representation of the closure according to the invention]

Fig. 1

(New Sheet)

SPANISH PATENT AND TRADEMARK OFFICE

PRIORITY DATA. = (31) NUMBER: - . = (32) DATE: - . = (33) COUNTRY: - . = **A1**. = (12) **PATENT OF INVENTION**. = (21) APPLICATION NUMBER: **200101748**. = (22) FILING DATE: **26 JULY 2001**. = (71) APPLICANT(S): **MONTSERRAT MARSAL, ALBERT**; NATIONALITY: **Spanish**; ADDRESS FOR SERVING: **Escollera del Poblenou - Local 19 - Port Olimpic, Barcelona 08005, Barcelona**. = (72) INVENTOR(S): **Montserrat Marsal, Albert**. = (73) TITLE HOLDER(S): - . = (11) PUBLICATION NUMBER: - . = (45) DATE OF PUBLICATION: - . = (62) PATENT FROM WHICH THE PRESENT APPLICATION IS A DIVISIONAL APPLICATION - . = (51) Int. Cl.: - . = (54) TITLE OF THE INVENTION: **"Container closure"**.

DRAWING (FOR USE IN INTERPRETING THE ABSTRACT ONLY)

[Representation of the closure according to the invention]

Fig. 1

(57) ABSTRACT

Container closure, such as is suitable for being mounted in the exit aperture of the container and hermetically closing the exit aperture, and which comprises a first inflatable part (1) and a second part (3) suitable for being secured in the exit aperture, and means of separation (7) suitable for preventing a liquid held in said interior of said container from passing to said first inflatable part (1). The means of separation (7) can comprise a semi-permeable filter (8), suitable for allowing the passage of gases and for preventing the passage of liquids, or a hermetic division.

(Fig. 1)

CONTAINER CLOSURE

DESCRIPTION

Field of the invention

This invention relates to a closure for a container, in which the container has an exit aperture, by which the interior of the container communicates with the exterior, and in which the closure is such as may be mounted in the exit aperture and hermetically close the exit aperture. The closure comprises a first inflatable part and a second part suitable for being secured in the exit aperture.

State of the art

Containers are widely used, in many different ways, to contain almost any kind of product. Containers are, thus, adapted to be filled and emptied with a product, and always have an exit aperture, whose dimensions are adequate for the product contained. Frequently it is convenient to be able to close the exit aperture of these containers, for which reason it is provided with a closure or cap. Container caps are known, serving to close the container in a hermetic manner, so that no air or any other gas may pass from the interior of the container to the exterior, should the interior pressure be greater than the exterior pressure, and vice versa, should the interior pressure be less than the exterior pressure. All kinds of drinks, carbonated or non-carbonated, personal hygiene products (shampoos, liquid soaps, colognes, skin creams, etc), household cleaning products (liquid detergents, clothes softeners, etc), including some tennis ball containers, are examples of the containers cited above.

Container closures or caps are known which include an additional member serving as an extra inducement for the purchase of the product, concretely such closures comprise a first inflatable part and a second part suitable for being secured in the container exit aperture, and which, when the closure or cap is mounted in the exit aperture, the interior of said first inflatable part is in communication with the container interior. These caps have been described in the document ES U9900951, published on 16/09/1999 and which is included in the present for reference purposes.

In such caps, should the container hold a carbonated liquid, usually a refreshing drink, the first inflatable part will inflate by reason of the excess pressure generated by the gas which is given off by the liquid when the container is shaken, all of which constitutes an obvious enticement and additional inducement for product sales. Subsequently the first inflatable part can be deflated, either by waiting a short period of time so that the gas is reabsorbed and/or escapes to the exterior, should the closure not be entirely hermetic, or simply by separating the cap from the container and allowing a quicker escape of the gas accumulated in the interior of the first inflatable part.

Should the container be elastic another kind of effect can be produced, which consists in squeezing the container, e.g. with the hand, the container partially collapses under the exterior pressure, deforming, and giving rise to an interior excess pressure which will cause the first inflatable part of the cap to inflate. Likewise the contrary will take place: if, once the first inflatable part of the cap is inflated, the deformation of the container is maintained and a short period is allowed to pass in order that the excess pressure in the interior of the container dissipates, due to the gas contained in the container escaping from the interior to the exterior, and subsequently the exterior pressure is rapidly released, e.g. by opening the hand, allowing that the container reacquire its original form, a negative pressure is created in the interior of the container which will tend to suck the first inflatable part of the cap into the interior of the container.

These effects, combined with first inflatable parts which are produced in attractive colours and shapes, represent a sales enticement for the user-product according to the invention.

It is also possible to directly market this kind of cap, or simply market an elastic container with this kind of cap, and, optionally, market tablets which give off a gas when in contact with any liquid of common household use, such as tablets which are effervescent in water; such products can represent a marketable plaything without necessarily needing to accompany, as sales incentive, other products.

These caps can be supplied directly mounted on the container or can be supplied as an extra cap to the conventional cap, in which case the final user can use either of the caps as he wishes. In this last case it is advantageous that both kinds of caps be supplied joined together, which facilitates and reduces the costs of supplying the second cap and reduces the risk of the user mislaying one of the caps.

The containers usually have a cylindrical part, called the container neck, and usually contain liquids, such as for example conventional bottles. Although this does

not in any way discard applications with respect to other types of container, such as for example drinks cans, or tetra-brik container variants.

These caps comprise a first inflatable part, with an open end, and a second part, with an aperture, in which the first inflatable part can be secured to the second part, in a hermetic manner and by various means (gluing, welding, by means of an elastic device, such as a circlip, by bi-injection, etc).

When these caps entirely substitute the conventional cap it is necessary to provide the cap with a cover lid which closes the aperture of the upper end of the second part. The function which this lid must perform is to retain the first inflatable part in the interior of the cap, or the container, during packaging, distribution and marketing. Should the container hold a liquid with gas, it should be taken into account that the lid must be able to withstand the gas pressure, which will be transmitted through the first inflatable part. Additionally, the cover lid must be easy to remove by the user, by means of a manual operation. Should the second parts be made from metal, a cover lid similar to that used for drink cans can be designed, in which a finger pull-ring allows the removal of a tab which closes the can. Should the second parts be made from plastic, pre-punched cover lids can be designed.

Nevertheless, such known caps suffer from some drawbacks. For instance, there is the risk that the liquid held in the container enters the interior of the first inflatable part. Additionally the first inflatable part deflates rapidly when the container is opened, since the excess pressure present in the container and which maintains the first inflatable part inflated is lost when the container is opened.

Similarly, the energy accumulated in the interior of the first inflatable part (in the form of pressurised gas) can be used to achieve certain effects which increase the inducement offered by the cap.

Summary of the invention

The aim of this invention is to overcome the above drawbacks. This objective is achieved by means of a container closure or cap such as that indicated at the beginning of this specification, characterised in that it comprises means of separation suitable for preventing the passage to said inflatable part of a liquid held in said interior of said container. This can be achieved, e.g. by providing that the means of separation comprise a semi-permeable filter, suitable for allowing gas to pass and for preventing the passage of liquids. Another example of an embodiment is obtained when the means of separation comprise a hermetic division. Either of these

embodiments prevent the liquid held in the container from entering the interior of the first inflatable part.

An example of such semi-permeable filters could be micronic filters, or borosilicate microfibre filter with three-dimensional finish, marketed with the registered trademark ULTRAIR. In general, it should be taken into account that what is aimed at is avoiding high quantities of liquid from entering the first inflatable part. This liquid, if later returning to the container, could cause a disagreeable impression on the user. Likewise it could be inconvenient in the event of breaking of the first inflatable part, which, though through suitable design can be minimised, cannot be controlled should such breaking be caused by external factors. It should also be taken into account that the passage of very small quantities of liquid, such as the passage of vapour which later condenses in the first inflatable part, does not prejudice the invention, and as such it should be understood that such eventualities are within the scope of this invention, and that a semi-permeable filter which includes the passage of vapour, and even small quantities of liquid should be considered as being included under what, in the present application, has been named a semi-permeable filter.

Preferably the container closure comprises a check valve or non-return valve. This valve allows gas to pass to the interior of the inflatable part but prevents passage of the gas in the opposite direction. This allows the first inflatable part to remain inflated when the container is opened. In this manner the effect obtained is of much longer duration.

Another preferable embodiment of the invention is obtained by providing the container cap with at least one gas exit aperture, which allows the gas accumulated in the interior of the first inflatable part to escape. As will be shown below the exit of such gas can be used to achieve various effects, using the energy (in the form of pressurised gas) accumulated in the interior of the first inflatable part. This gas exit aperture or apertures can be substituted for the non-return valve. The gas passes from the interior of the container to the first inflatable part through the gas exit aperture and the first inflatable part inflates. Subsequently the container is opened and the first inflatable part deflates slowly thereby achieving any of the effects described below. The gas exit aperture or apertures must thus be small, in order that the first inflatable part deflates less rapidly. This could result in the inflation of the first inflatable part taking place more slowly. To avoid such, the container closure could be provided with a non-return valve, which allows a rapid inflation, as well as a gas exit aperture or apertures which allow a slow deflation or escape.

The energy accumulated in the first inflatable part may be employed to make the container closure, once the first inflatable part has been filled and the closure removed from the container, turn on itself. For such to be possible the container closure must be provided with rotational means which utilise the gas accumulated in the first inflatable part. Such rotational means may be, e.g. the gas exit aperture or apertures, which may be arranged such that they exercise a rotational moment with respect to a rotational axis, which will usually substantially coincide with a vertical axis which defines the container neck. In this manner, when the container closure is placed, with the first inflatable part inflated, on a surface (preferably smooth and horizontal), the rotational moment generated by the gas flows escaping through the gas exit apertures will tend to make the container closure spin on itself, about a rotational axis.

Another possible manner in which to employ the energy of the accumulated gas consists in providing the container closure with means of movement which utilise the gas accumulated in the first inflatable part to move the container closure. Preferably this is achieved by means of the gas exit aperture or apertures, which have a geometry which establishes a resultant force with a horizontal component greater than zero. This horizontal component will tend to move the container closure along a surface on which the container closure is placed with the first inflatable part inflated. Logically, it is possible to combine the effects of rotation and movement.

The forces generated by the accumulated gas escaping are small, and it is thus advantageous to reduce as far as possible the friction between the container closure and the surface on which it rests. In this respect it is advantageous to provide the container closure with at least one skirt which surrounds the means of rotation and/or movement so that an air cushion can be created in the lower part of the container closure, in a manner similar to a hovercraft air cushion. In container closures of the screw type, the very lateral walls of the closure (which contain the screw thread) can serve as a skirt. However these lateral walls are relatively thick, and are thus not flexible. In addition, there are frequently small irregularities in the lower edge, corresponding to the anchorage points of the hygiene guarantee ring. It would thus be desirable to add a skirt made in a very light and elastic material, which would be capable of adequately closing the space comprised between the container closure and the surface on which the closure has been placed, in order to improve the air cushion effect.

Preferably the skirt has at least one lateral aperture. This lateral aperture or apertures can substitute and/or co-operate with the gas exit aperture(s) in the movement or rotation of the container closure. Preferably the skirt has as large a

perimeter as possible, in order to maximise the size of the air cushion. For the same reason, the lateral apertures will be relatively distant from the rotational axis, so that the rotational moment will be as high as possible.

In certain cases, it could be advantageous, apart from stopping the liquid from entering the first inflatable part, to likewise prevent the gas from the interior of the container from entering the first inflatable part. It is therefore necessary to provide an alternative manner in which to inflate the first inflatable part. The container closure could thus be provided with an entrance aperture which allows gas to be introduced in said upper inflatable part. This entrance aperture is independent of the container exit aperture, and does not communicate with it. In this manner, between the first inflatable part and the container exit aperture there is an entirely hermetic division, such as that indicated previously, and neither the liquid nor the gas from the container can pass to the first inflatable part. An example of an embodiment is achieved by making the second part of the container closure a totally conventional closure, such as e.g. a screw cap for a refreshing drink. The upper part of this closure is closed by a hermetic division. On this conventional closure, which serves as the second part, a first inflatable part is mounted, which can likewise comprise the remaining optional members of the present invention, such as the non-return valve, the rotational means, the means of movement etc.

Preferably the entrance aperture has an access tube which is at least partially flexible.

To prevent the first inflatable part from inflating when the container closure is mounted on the container, e.g. with reference to containers for drinks which contain gas (e.g. carbon anhydride, such as refreshing drinks, bubbly wines, etc.), it is necessary to provide a member which would prevent such. In some cases it could be enough to provide the container closure with a cover lid suitable for closing the aperture of the upper end of the second part. Preferably this cover lid is suitable for being separated from the closure by means of a manual operation. In other cases it could be advisable to have a seal which prevents the passage of the gas from the inside of the container to the inside of the first inflatable part. This seal could be substituted for the cover lid, or could be complementary thereto. Advantageously this seal is arranged in the interior part of the container closure and, therefore, it is advantageous that the seal be removed or broken automatically. In this respect an additional closure device could be included which perforates the seal in the final moment of the operation of container closure in the manufacturing process. The additional closure device comprises a punch (or as many punches as there are gas passage apertures in the container closure) which breaks the seal, and

simultaneously covers the broken area, so that the hermetic seal is maintained and thus the first inflatable part does not inflate. When opening the container, the punch ceases to maintain a hermetic closure, and the gas accumulated in the container passes rapidly to the first inflatable part. In this manner the gas accumulated in the container and which, in normal conditions, is evacuated to the exterior is utilised optimally. Containers with screw cap for carbonised drinks frequently have both the screw thread of the cap and the screw thread of the container neck provided with discontinuities, in order to facilitate the evacuation of the gas accumulated in the interior of the container. In the case of a container closure according to the invention it is to be recommended that the screw thread does not have such discontinuities, since the very objective is that the accumulated gas pass to the interior of the first inflatable part and not escape to the exterior.

Another manner of achieving an automatic opening of the seal is, for example, by including a rending device which adopts a rending position during the opening of said container closure and a folded position during the closing of said container. In this case, the rending device can include a cutting or perforating blade inclined so that, when the closure is closed, the relative movement between the blade and the seal takes place with an angle such that the blade remains folded without cutting or perforating the seal. However, when opening the closure, the cutting or perforating end of the blade tends to break the seal, achieving the same effect as previously.

Both the additional closure device and the rending device can be independent members which are intercalated between the container neck and the container closure, but can also be part of the container neck, which requires the manufacture of containers specifically according to the invention. The choice of either alternative does not impact the scope of the invention.

Another manner in which the marketing effect of the container closure can be increased according to the invention consists in including at least one disposable member suitable for being expelled from the container closure when the first inflatable part inflates. This disposable member can be anything which is compatible with the invention. It could be a small gift, but could also be an object or objects whose function is to achieve a visual effect, such as pieces of paper or plastic or metallic materials ("confetti", streamers, etc.).

Advantageously the first inflatable part is suitable for being housed, in deflated state, in the interior of the container or in the interior of said container closure.

The container closure can be substituted for the conventional closing cap or can be supplied connected with the conventional closing cap.

It is also advantageous to include a device suitable for generating sounds by means of the gas passing.

Finally it is likewise possible to combine the present invention with a plurality of the alternatives described in the document ES U9900951, cited above.

Brief description of the drawings

Other advantages and features of the invention will become apparent from the following description, in which, without that such be considered in any way limitative, a preferred mode of embodiment of the invention is described, with reference to the appended drawings, in which:

figure 1, is a lateral cross section of a first container closure according to the invention;

figure 2, is a lateral cross section of a second container closure according to the invention;

figure 3, is a lateral cross section of a third container closure according to the invention;

figure 4, is a plan view from above of a fourth container closure according to the invention;

figure 5, is a lateral cross section of a fifth container closure according to the invention;

figure 6, is a lateral cross section of a sixth container closure according to the invention;

figure 7, is a lateral cross section of a container with an auxiliary closure device; and

figure 8, is a perspective view of a rending device.

Detailed description of some embodiments of the invention

Figure 1 shows a container closure suitable for being assembled in the conventional threaded exit aperture of a plurality of bottles. The closure has a first inflatable part 1 and a second part 3 which is suitable for being secured to the bottle exit aperture. The closure has a hermetic seal 5 which aids in closing the bottle in a

hermetic manner. Additionally the closure has means of separation 7 which prevent the liquid held in the bottle from passing to the first inflatable part 1. In this case the means of separation 7 are an ULTRAIR semi-permeable filter 8, such as indicated above. The first inflatable part 1 is joined to the second part 3 along a communication passage 9 by any known conventional means, such as adhesion, thermofusion, fixation by means of elastic devices, injection by bi-injection.

The Figure 1 closure has, in addition, a check valve or non-return valve 11. In this manner the gas under pressure which accumulates in the interior of the container passes through the semi-permeable filter 8 and through the non-return valve 11 inflating the first inflatable part 1. It is then possible to remove the container closure and the first inflatable part 1 remains inflated thanks to the non-return valve 11 which prevents the gas from escaping.

Figure 2 shows a different container closure according to the invention. In this example the second part 3 has two gas exit apertures 13, which in the present example have been shown as incorporated in an additional component but which could be integrated directly in the second part 3. In this case the first inflatable part 1 inflates by means of the gas which passes both through the non-return valve 11 and through the gas exit apertures 13. In this example the semi-permeable filter 8 has been arranged above the non-return valve 11 and the gas exit apertures 13 thus avoiding that liquid enters the first inflatable part 1.

Once the first inflatable part 1 has been inflated the container closure can be removed, after which the first inflatable part 1 will start to deflate slowly with the gas escaping through the gas exit apertures 13. Both gas exit apertures 13 are arranged such that the gas which escapes does so in contrary directions, thus exercising a rotational moment which will tend to rotate the closure. In this manner the gas exit apertures 13 serve as rotational means. Additionally, if the closure is placed on a substantially smooth and horizontal surface, the gas leaving the gas exit apertures 13 will generate a slight excess pressure in the space 15 comprised between the interior of the closure and said surface. This excess pressure will tend to raise the closure above the surface, thus reducing friction and facilitating the rotation of the closure. In this respect it could be advantageous to add flexible skirts 17 to the closure which improve the air tightness of the space 15 and thus increase the air cushion effect which forms in the interior of the space 15.

The existence of the non-return valve 11 is not absolutely necessary for the invention as shown in figure 2, since the first inflatable part 1 could be inflated simply by receiving the gas through the gas exit apertures 13. However the gas exit apertures 13 should be small to avoid the gas escaping too quickly. Small apertures

could mean though that the inflation of the first inflatable part 1 also takes place excessively slowly, which could be improved by the addition of the non-return valve 11.

Likewise, in figure 2 the gas exit apertures 13 have been represented as having a first vertical descending stretch and a second horizontal stretch, these second stretches being those that are orientated in opposite directions for each gas exit aperture 13. But multiple alternative geometries are possible. Thus for example, the gas exit apertures 13 could be ducts which are straight but inclined with respect to the rotational axis, which usually will coincide with the axis defined by the closure thread and the thread of the container neck.

Figure 3 shows another example of an embodiment, in which the first inflatable part 1 is bound between the walls of the communication passage 9 and an additional component which has a gas exit aperture 13. The closure likewise has a semi-permeable filter 8 and also has a seal 19. This seal 19 closes the communication passage 9 and allows preventing the first inflatable part 1 from inflating before it is opportune to do so, such as for example during the factory bottling and closing phase or during transport. In order that the first inflatable part 1 inflate, the seal 19 must be removed or rended. This can be achieved manually (opening the closure, removing the seal 19 and replacing the closure on the bottle) or it could be achieved automatically, as will be described below.

A manner of achieving the automatic rending of the seal 19 could be, e.g., by means of a device as shown in the figure 7. The bottleneck has at its intermediate point a punch 21 and an additional hermetic seal 23 supported by arms 25 which join it to the bottleneck, forming an additional closure device 26. This auxiliary closure device 26 can be an integral part of the bottle or can be an additional part which is lodged in the bottleneck by any known method, e.g. by means of one of those methods described in the document ES U9900951. In this manner in closing the bottle with the closure during manufacture in the bottling plant, the closure begins to screw down on the bottle neck with the seal 19 intact, and thus the first inflatable part 1 does not inflate. In the final moment of closure of the bottle, which is to say at the limit of travel of the closure, the punch 21 perforates the seal 19 lodging in the gas exit aperture 13. Practically at the same moment the additional hermetic seal 23 hermetically closes the perforated area of the seal 19, and an airtight seal of the closure is obtained. When opening the bottle, on initial unscrewing of the closure a fluid communication is quickly established through the rended seal 19 and the gas exit aperture 13. In this manner the excess pressure present in the bottle is optimally utilised, which serves for filling the first inflatable part 1 instead of escaping to the

exterior, which normally takes place. This can be optimised by appropriate choice in the materials and thickness of the two hermetic seals 5 and 23.

Figure 4 shows how in the upper part of the closure there is a lid 25 which closes the communication passage 9 such that during transport and storage of the bottle, the first inflatable part 1 remains housed in the interior of the communication passage 9 and the aperture which communicates the communication passage 9 with the exterior remains closed by means of the lid 25.

Figure 4 further shows that it is possible to add lateral apertures 27 in the skirt 17 which co-operate or substitute the rotational effect or effect of movement which can be performed by the gas exit apertures 13. Which is to say, e.g., should one wish the closure to rotate, it is possible to arrange the gas exit apertures 13 so that they exercise a rotational moment, such as described above, and additionally, that there be lateral apertures 27 which likewise exercise a rotational moment which increase the rotational effect. Alternatively the gas exit apertures 13 could be arranged not to perform any "special effect", and that the rotational moment be exercised uniquely by the lateral apertures 27.

The figures have all showed solutions in which the gas exit apertures 13 and/or the lateral apertures 27 exercise a rotational moment. However it is also possible to provide the gas exit apertures 13 and/or the lateral apertures 27 with geometries such that, instead of exercising a rotational moment, they exercise a resultant force which tends to move the closure thus configuring means of movement. Obviously it is also possible to achieve combined effects.

The lateral apertures 27 can be arranged both in the skirts 17 and directly in the lateral exterior wall of the closure.

Figure 5 shows another embodiment of the invention. In this case the second part 3 has a hermetic division 29 which totally separates the interior of the bottle from the first inflatable part 1. In this case the second part 3 closes the bottle in a conventional manner. The second part 3 has at its upper part a threaded length 31 on which the first inflatable part 1 can be mounted. In this case the first inflatable part 1 has a geometry and components very similar to the closure assembly of the previous examples. The second part 3 further has an entrance aperture 33 which allows the introduction of a gas, through an access tube 35 to the interior of the first inflatable part 1. The access tube 35 is preferably flexible and allows manual inflation of the first inflatable part 1. The access tube 35 is preferably adequately protected to avoid its arriving to the user in a dirty or deteriorated state.

Figure 6 shows a container closure according to the invention with the first inflatable part 1 folded in the communication passage 9 and with the lid 25 closed.

Additionally there is a disposable member 37 represented diagrammatically, which, in practice, can be a plurality of objects such as small gifts, fragments of paper or of plastics or metallic materials ("confetti", streamers, etc).

Figure 8 shows an example of a rending device 39 for the seal 19. In this case the rending device 39 has been shown as an independent part which is secured in the inside of the bottleneck by any known means, but which can likewise be an integral part of the bottleneck, such as in the case of the auxiliary closure device 26. The rending device 39 can have at lest one flexible tab 41 (in the example shown in figure 8 there are two tabs 41). In this case, when closing the closure on the bottleneck, the tabs 41 are orientated such that the seal 19 tends to press them downwards, the seal 19 having a movement in the direction of rotation which goes from the point at which the tabs 41 are joined with the support structure of the rending device 39 to the free end of the tabs 41. However, when opening the bottle, the movement is in the contrary direction and thus the free end of the tabs 41 tends to penetrate in the seal 19 and/or to rend it establishing fluid communication between the interior of the container and the first inflatable part 1. It is further possible to increase this tendency of penetration by introducing burrs or irregularities in the seal 19.

CLAIMS

1.- Container closure, said container having an exit aperture, by which the interior of the container communicates with the exterior, said closure being such as is suitable for being mounted in said exit aperture and hermetically closing said exit aperture, said closure comprising a first inflatable part (1) and a second part (3) suitable for being secured in said exit aperture, characterised in that it comprises means of separation (7) suitable for preventing a liquid held in said interior of said container from passing to said first inflatable part (1).

2.- Container closure according to claim 1, characterised in that said means of separation (7) comprise a semi-permeable filter (8), suitable for allowing the passage of gases and preventing the passage of liquids.

3.- Container closure according to claim 1, characterised in that said means of separation (7) comprise a hermetic division.

4.- Container closure according to claims 1 or 2, characterised in that it comprises a check or non-return valve (11).

5.- Container closure according to at least one of claims 1 to 4, characterised in that it has at least one gas exit aperture (13) which allows the gas accumulated in said first inflatable part (1) to escape.

6.- Container closure according to at least one of claims 1 to 5, characterised in that it has rotational means which utilise the gas accumulated in said first inflatable part (1) to rotate said container closure.

7.- Container closure according to claim 6, characterised in that said rotational means are said gas exit apertures (13), which have a geometry which exercises a rotational moment with respect to a vertical rotational axis.

8.- Container closure according to at least one of claims 1 to 7, characterised in that it has means of movement which utilise the gas accumulated in said first inflatable part (1) to move said container closure.

9.- Container closure according to claim 8, characterised in that said means of movement are said gas exit apertures (13), which have a geometry which establishes a resultant force with a horizontal component greater than zero.

10.- Container closure according to at least one of claims 6 to 9, characterised in that it has at least one skirt (17) which surrounds said rotational means and/or said means of movement such that it allows the creation of an air cushion in the lower part of said container closure.

11.- Container closure according to claim 10, characterised in that said skirt (17) has at least one lateral aperture (27).

12.- Container closure according to claim 3, characterised in that it comprises an entrance aperture (33) which allows the introduction of a gas in said first inflatable part (1).

13.- Container closure according to claim 12, characterised in that said entrance aperture (33) has an access tube (35) that is at least partially flexible.

14.- Container closure according to at least one of claims 1 to 11, characterised in that it has a seal (19) which prevents a gas passing from the interior of said container.

15.- Container closure according to claim 14, characterised in that a break is performed in said seal (19) at the end of the operation of closure of said container, and in that said break is closed by means of an auxiliary closure device (26).

16.- Container closure according to claims 15 or 16, characterised in that it has a rending device (39) which adopts a rending position during opening of said container closure and a folded position during closure of said container.

17.- Container closure according to at least one of claims 1 to 16, characterised in that it includes at least one disposable member 37 suitable for being expelled from said container closure upon inflation of said first inflatable part (1).

18.- Container closure according to at least one of claims 1 to 17, characterised in that it has a cover lid (25) suitable for covering said aperture of the upper end of the second part (3).

19.- Container closure according to claim 18, characterised in that said cover lid (25) is suitable for being separated from the closure with a manual operation.

20.- Container closure according to at least one of claims 1 to 19, characterised in that it includes a device suitable for generating sounds with the passage of the gas.